

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554**

In the Matter of)

Amendment of the Commission's)
Rules to Establish New Personal)
Communications Services)

GEN Docket No. 90-314)
RM-7140, RM-7175, RM-7618)

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

REPLY COMMENTS

Apple Computer, Inc. ("Apple"), pursuant to Section 1.429 of the Commission's Rules, hereby submits its reply comments in response to the comments on the petitions for reconsideration and/or clarification of the Federal Communications Commission's (the "Commission" or "FCC") Second Report and Order in the above-referenced docket (the "Second R&O"),¹ particularly those related to unlicensed operation.

The comments supported many of the arguments made by Apple in its Petition for Reconsideration and/or Clarification and in its Comments on the petitions filed by other parties. For example, several commenting parties echoed Apple's concerns about the effect the "packing rules" will have on efficient operation within the unlicensed band and on the ability of unlicensed devices to operate without causing undue interference to those operating in adjacent bands.² Similarly, entities who could be adversely affected by an increase in the authorized power limits for licensed PCS base stations and mobile units supported Apple's position that any increase in these limits must include appropriate protections for co-channel and adjacent channel users.³

Finally, several parties discussed the need to remove the existing restrictive subdivision of the isochronous sub-band in favor of an approach that will not give

¹ Second Report and Order, GEN Docket No. 90-314, RM-7140, RM-7175, RM-7618, 8 FCC Rcd 7700 (released October 22, 1993). Unless otherwise noted, all citations to Comments are to the comments filed in the above-referenced docket on or about January 3, 1994, and all citations to Petitions are to the petitions for reconsideration and/or clarification filed on or about December 8, 1993.

² E.g. Ericsson Comments at 10-11; Omnipoint Comments at 9-10.

³ E.g. American Petroleum Institute Comments at 4-6; Association of American Railroads Comments at 5-7; Utilities Telecommunications Council Comments at 14-16.

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certain technologies an unfair advantage.⁴ Due to the unanimity of views on these issues, Apple will not restate its arguments on these matters, but urges that the Commission: delete the packing rules imposed on the asynchronous and isochronous sub-bands; limit licensed PCS base station and mobile unit power levels and control the emission masks for transmitters operating in spectrum adjacent to the unlicensed band; and eliminate the rigorous subchannelization of a portion of the isochronous band.⁵

The following issues, however, require more extensive comment.

I. THE COMMISSION SHOULD CONSIDER ALLOCATING SPECTRUM FOR "PRIVATE PCS" AND ADDITIONAL UNLICENSED SERVICES USING SPECTRUM THAT IS REALLOCATED FROM THE FEDERAL GOVERNMENT.

In its Comments, Apple strongly supported the service goals described by APCO and UTC with respect to "private PCS." In addition, it discussed the extent to which many of the applications outlined by APCO and UTC could be satisfied using unlicensed devices. Indeed, many of the visionary applications described by APCO and UTC, as well as those described by the Coalition of Private Users of Emerging Multimedia Technologies ("COPE") in its December 23, 1993, Petition for Rulemaking, echo Apple's vision for Data-PCS as originally outlined in its Petition for Rulemaking.⁶

While Apple supports the goals of these entities, it opposes any reduction in the allocation for unlicensed devices to provide for private PCS. Apple has repeatedly discussed the importance of an allocation of at least 40 MHz for unlicensed services and the adverse effect any reduction in this allocation could have on the development of unlicensed products.

⁴ E.g. Ericsson Comments at Appendix p. 3-5; Omnipoint Comments at 5-8.

⁵ In addition, Apple continues to urge the Commission to eliminate the barrier imposed by Section 15.323(a) that subdivides the otherwise contiguous asynchronous band; this request was not opposed by any commenting party. Finally, although the spectrum allocation for unlicensed devices is being considered in the context of Apple's Emergency Petition, Apple reiterates its view that the Commission *must* allocate the 1910-1930 MHz band, rather than the 1900-1920 MHz band, for unlicensed asynchronous applications, and notes that Ericsson's Comments also restated that company's support for an allocation of a contiguous 20 MHz isochronous band. Ericsson Comments at Appendix p. 2.

⁶ Apple feels that COPE does not yet appreciate the unique qualities and value that can be achieved through use of nomadic unlicensed applications. In fact, while COPE concentrates on non-nomadic unlicensed applications, many of their examples are by nature non-coordinatable and thus require cleared spectrum, as does Data-PCS.

The reallocation of spectrum from the federal government to the private sector pursuant to the 1993 Budget Act, however, will increase the available spectrum resource. At that time, Apple encourages the Commission to consider expanding the unlicensed band and making an allocation for "private PCS."

II. THE UNLICENSED BAND SHOULD BE REGULATED SOLELY THROUGH THE EQUIPMENT AUTHORIZATION PROCESS.

In its petition for reconsideration, AT&T urged the Commission to exclude "common carrier" services from the unlicensed band.⁷ Apple shares AT&T's concern that broad-based demand for unlicensed services, including services that are similar to "common carrier" services being provided in the licensed band, will congest the unlicensed band.⁸

AT&T's proposed solution, however, conflicts with the essential nature of unlicensed services. From the outset of this proceeding, Apple has urged the Commission to reject "application-defined regulatory barriers to unlicensed frequencies, even if such barriers [are] determined to be in the public interest."⁹ The unlicensed band must be available to any product that meets the applicable technical requirements. Neither the Commission nor industry should attempt to penetrate and decode the content and origin of bits and bytes conveyed by unlicensed devices. Any attempt to do so would open up a whole new set of complex issues, thereby miring the Commission and industry in a protracted debate over the scope of "appropriate" unlicensed services and delaying the introduction of unlicensed devices.

⁷ AT&T Petition at 6-11.

⁸ This is by no means a new issue: Apple discussed this problem at length more than one year ago, noting that cable companies and local exchange carriers, among others, are highly likely to turn to the unlicensed band to provide services. Reply Comments of Apple Computer, Inc., GEN Docket 90-314, at 3-4 (filed January 8, 1993). Apple cited statements by BellSouth, Centel Corp., and the United States Telephone Association expressing plans to utilize unlicensed spectrum for wireless local loop and other similar services.

⁹ *Id.* at 4; see also Apple Petition for Rulemaking, "Data-PCS," RM-7618, at ii, 18, 22-23 (filed January 28, 1991) (discussing importance of non-discriminatory access to unlicensed band). WINForum, which originally served as a gathering-point for User-PCS advocates, took a similar position, stating as one of its "fundamental principles" that "the Commission should require compliance with FCC rules solely through the equipment authorization process. That authorization scheme should not establish exclusive or preclusive access to any portion of the User-PCS allocation by any party...." Comments of the Wireless Information Networks Forum, ET Docket No. 92-9, at 3 (filed June 5, 1992). The precise text of that document was approved by each of the 29 companies listed at the document's close.

Accordingly, the Commission should reject AT&T's suggestion that access to the unlicensed band should be regulated on an entity-by-entity, or application-by-application, basis.¹⁰ Rather, it should continue to assess the adequacy of the spectrum allocation for unlicensed services, in light of the variety of uses to which unlicensed products are put.¹¹

III. THE COMMISSION SHOULD GRANT APPLE'S REQUEST THAT IT REMOVE ALL REFERENCES TO UTAM, INC. FROM ITS RULES.

Contrary to Northern Telecom's accusation, Apple's Petition for Reconsideration did not constitute an "unwarranted" "attack[]" on UTAM.¹² Rather, it stated a simple proposition: The FCC has not yet finally designated UTAM, Inc. as the entity that will be responsible for clearing the unlicensed band and coordinating use of the band in advance of band clearing and, therefore, the Commission's rules should not refer to UTAM by name. Deleting specific references to UTAM from the rules would confirm UTAM's tentative designation, provide the Commission with the necessary flexibility in the event it determines that UTAM has failed to submit acceptable funding and band clearing plans, as required by the Second R&O, and make the Part 15 rules consistent with other similar FCC rules, such as those dealing with frequency coordinators.¹³

Apple participates in UTAM, and supports UTAM's stated interest in the equitable and prompt clearing of the unlicensed band.¹⁴ Apple continues to be concerned, however, by UTAM's concentration on the deployment of coordinatable devices, and its apparent failure to focus on its full range of potential responsibilities, including prompt nationwide band-clearing to permit the deployment of nomadic Data-

¹⁰ Opposition to, or questions concerning the scope of, AT&T's proposal were also expressed by GTE Service Corp., Omnipoint, Pacific Bell and Nevada Bell, and Bell Atlantic. GTE Comments at 13; Omnipoint Comments at 12-13; Pacific Bell and Nevada Bell Comments at 11-12; Bell Atlantic Comments at 13.

¹¹ American Personal Communications ("APC"), a consistent advocate for unlicensed spectrum since this rulemaking began, stated in its Comments that "high speed" wireless data services of 32 or 64 Kbps (which the computer industry would find painfully inadequate) "simply cannot be wedged into 20 MHz allocations." APC Comments at 12. Apple fully agrees.

¹² Northern Telecom Comments at 17.

¹³ The Association of American Railroads ("AAR") supported the deletion of UTAM's name from the rules. AAR Comments at 7.

¹⁴ For example, Apple participated at the organizational meeting of UTAM, Inc. in Boulder, Colorado on December 7-8. (To the best of its knowledge, it was the only computer company to do so.) Apple has declined to pay the dues required for attaining voting membership in UTAM because it is not yet clear whether UTAM will be an effective organization representing all interests appropriately.

PCS devices.¹⁵ Apple hopes that UTAM will be able to demonstrate that it can be entrusted with the public responsibility contemplated in the Second R&O. Until it does so, however, it is inappropriate and misleading for the FCC's rules to speak as if UTAM had already satisfied its burden of proof.

IV. RESPONSIBILITY FOR ESTABLISHING EQUIPMENT AUTHORIZATION PROCEDURES FOR UNLICENSED DEVICES SHOULD NOT BE DELEGATED TO A PRIVATE ENTITY.

Several commenting parties sought to have the task of developing test procedures for equipment authorization, properly that of the Commission, turned over to industry organizations.¹⁶ This approach should be rejected for two related reasons: the potential for a delay, perhaps as long as several years, and the risk that the procedures developed by an industry group will promote private interests rather than the public interest.

The Commission has consistently demonstrated its ability to develop and apply procedures that satisfy various interests. Accordingly, while the Commission should entertain reasonable input to its process, it should retain responsibility for developing equipment authorization standards.

V. THE COMMISSION SHOULD ASSESS SUGGESTED CHANGES TO THE WINFORUM ETIQUETTE BASED ON ONLY THE TECHNICAL MERITS OF THE PROPOSAL.

Several commenting parties suggested modifications to the WINForum etiquette, and in some cases have attempted to justify these modifications on the ground that they reflect a "consensus" view.

The claim of "consensus," however, does not always accurately reflect reality.¹⁷ Omnipoint, Ericsson, and Apple have each pointed out cases in which WINForum and some of its members presented "consensus" positions to the Commission where, in fact, the record within WINForum demonstrated that no consensus existed. Other

¹⁵ See Second R&O at ¶ 88.

¹⁶ E.g. AT&T Petition at 2-6 and n.7; AT&T Ex Parte Presentation, ET Docket No. 92-9 (November 17, 1993) ("equipment certification should be contingent on promulgation of ANSI-standard measurement procedures").

¹⁷ As Pacific Bell and Nevada Bell observed, the very existence of an industry furor about the so-called "consensus" belies its existence. Pacific Bell and Nevada Bell Comments at 10 ("efforts to make changes in the spectrum etiquette indicate that there are still ongoing concerns about various aspects of the etiquette.").

companies have reported that their positions were not given proper consideration and have filed opposition to technical points.

As a result, the Commission should not defer to positions that are presented as "consensus" views, believe exaggerated claims about the fairness of the WINForum process, or reject positions merely because some commenters claim that the petitioner is attempting to overturn the "consensus" position for self-serving means.¹⁸ Rather, it should assess the technical merit of each proposal, in light of the actual support for, and opposition to, the proposal.

VI. PROPOSED CHANGES TO THE RULES GOVERNING SHARED ANTENNAS, CLOSELY LOCATED OR COOPERATIVE DEVICES, AND OTHER SIMILAR MATTERS MUST BE CAREFULLY EVALUATED IN CONTEXT.

Several parties have asked the Commission to modify its rules regarding shared antennas, closely located or cooperative devices, and other similar matters. Some of these proposals, however, raise the possibility that devices of a single manufacturer could dominate a channel and preclude access by others. This concept is the very antithesis of the effort to develop a coexistence etiquette. Abandoning or significantly modifying the fundamental "listen-before-talk" operating principle should not be permitted unless alternative provisions for coexistence are assured.¹⁹

VII. THE COMMISSION SHOULD GRANT APPLE'S REQUEST FOR CONDITIONAL TECHNICAL APPROVALS, AS CLARIFIED BY SPECTRALINK.

In its Petition, Apple proposed that the Commission create a process for conditionally approving unlicensed devices. SpectraLink's Comments correctly noted that Apple's proposal could be misconstrued and thereby create a risk of product deployment without coordination and in advance of band clearing.²⁰

Apple agrees with SpectraLink that the Commission should not permit non-coordinatable products to be deployed in advance of band clearing. Its proposal was

¹⁸ E.g. WINForum Comments at 1.

¹⁹ The problem is exacerbated by parties not familiar with local area network access protocols. Northern Telecom, for example, asserts that "the only possibility of interference to another system could occur where the coverage of the portable receiver is significantly different than that of the base station, but since they both will be operating at the same power levels the coverage areas should also coincide." Northern Telecom Petition at A-5. Not only is there no mandate that devices operate at the same power level, but also the "coverage area" of one device, at one location, is likely to be quite different from another device at another location.

²⁰ SpectraLink Comments at 4-5.

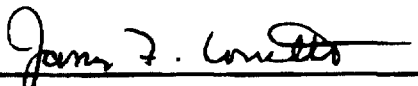
intended solely to create a process for resolving ambiguities in the technical approval process, akin to an "advisory opinion," in order to enable manufacturers to proceed with product development with greater certainty. Apple agrees with SpectraLink that the Commission should be absolutely clear that the "conditional approval" proposed by Apple would not in any way be comparable to an actual FCC certification, nor would it limit or modify the rules' existing prohibition on the importing, advertising, and sale of Part 15 devices in advance of certification.

CONCLUSION

Wherefore, for the reasons stated above, Apple requests that the Commission grant or deny the petitions for reconsideration filed in response to the Second R&O as discussed herein.

Respectfully submitted,

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